

New Mexico Environment Department
Wastewater Technical Advisory Committee

Product Review Process
June 23, 2011

This document describes the Wastewater Technical Advisory Committee's (WTAC) submittal requirements and review process for onsite wastewater products and product modifications. These products include advanced treatment systems, non-conventional drainfield products, and septic tank treatment additives. After review, the WTAC may recommend a product's approval or denial to the Secretary of the New Mexico Environment Department (NMED).¹

I. Submittals

The Manufacturer shall submit one original and six copies of the product package, both in hardbound paper format and electronic portable document format (PDF). Submissions are to be delivered to the attention of the:

*Bureau Engineer
NMED Environmental Health Bureau
Harold Runnels Building
P.O. Box 5469
Santa Fe, NM 87502-5469.*

Submittals must be received at least 90 days prior to the quarterly WTAC meeting at which review is sought. **Submittals should not include any confidential information. The WTAC and NMED will not be responsible for keeping any information confidential.**

Product packages shall be reviewed by the Bureau Engineer for completeness. A complete package will contain the information required below. Product packages that are incomplete will be returned without further review. If in the Bureau Engineer's judgment a product package is substantially complete, only missing minor collateral material/information, the Engineer will notify the Manufacturer. If the missing collateral information is supplemented by the Manufacturer at least 60 days prior to the WTAC meeting, the product package will be considered complete. The Bureau Engineer shall forward packages that are complete to the WTAC a minimum of 30 days prior to the upcoming meeting. A final decision to place the product on the upcoming meeting agenda will be made by the WTAC Chair who will notify the NMED support staff for preparation of the draft agenda.

¹ Additional information may be obtained from the Liquid Waste Program webpage at:
<http://www.nmenv.state.nm.us/fod/LiquidWaste/index.html>

Products lacking the performance data required to be considered complete, but which have met all the other submittal requirements, may request a recommendation for experimental or conditional approval from the WTAC.

Complete product packages will be reviewed on a first-come, first-served basis at one of the WTAC's regular meetings. A specific meeting may be requested but there is no guarantee that the product review can be scheduled accordingly. Once scheduled, product representatives will be invited to make a 20 minute presentation.

II. Approval Types

After evaluation the WTAC may recommend a product for approval by the Secretary of the New Mexico Environment Department. Approval recommendations shall be for one of the following statuses.

A. Experimental Status:

1. Allow the construction, operation, and monitoring of no more than ten domestic advanced treatment systems on sites that otherwise could be served by a conventional septic tank/dispersal system, are served by a permitted, non-discharging liquid waste system, or discharge to a community sewer.
2. Experimental drainfield systems may be installed on no more than ten sites that otherwise could be permitted for conventional dispersal.
3. All experimental advanced treatment installations must be monitored per Section IV below. Department orders for experimental status will be for a maximum of 30 months. After the experimental period or upon request for advancement in status, monitoring data must be reported to the Bureau Engineer for WTAC review.
4. Experimental products may be installed on commercial sites provided the installation is engineered² and approved in writing by the manufacturer. Commercial sites shall not count towards the three minimum or against the ten maximum installations of advanced treatment systems required herein but must meet the monitoring and reporting requirements.
5. If at least three domestic systems have been installed and monitored for more than one year, the manufacturer may then request a recommendation from the WTAC that the product be advanced to conditional status. A request for advancement must be made to the Bureau Engineer at least 90 days prior to the quarterly WTAC meeting at which advancement is sought.

B. Conditional Status:

1. Allows the permitting and installation of no more than 100 domestic treatment systems on sites that may include limiting conditions requiring advanced treatment, but will not include sites requiring a variance.³

² Sealed and signed by a Professional Engineer licensed to practice in New Mexico.

³ Liquid Waste Disposal and Treatment Regulations, 20.7.3 NMAC

2. Conditional status may be recommended subject to conditions that would allow limited use of the product in areas challenged by altitude, climate, temperature, influent water quality and periodic or seasonal flow. The WTAC recommendation may include limits on the number of installations in challenging environments.
3. Conditional status drainfield products may only be installed on sites where conventional dispersal systems can be permitted.
4. Conditional products may be installed on commercial sites provided the installation is engineered⁴ and approved in writing by the manufacturer. Commercial sites shall not count against the one-hundred maximum installations required herein but must meet the monitoring and reporting requirements.
5. Conditional status is granted for five years. Monitoring data, as required by liquid waste permits for the installed systems, must be submitted to the Bureau Engineer for review by the WTAC. Upon consideration of the data, the WTAC may recommend the product be advanced to standard status. Advancement to standard status may be requested after one year of conditional status.

C. Standard Status:

1. Unlimited permitting and installation of the product throughout the jurisdiction of NMED is allowed. Tertiary treatment⁵ products will include an approved level of total nitrogen treatment.
2. Standard status is granted for seven years, after which time, the manufacturer must submit a Request for Renewal, and a Design Modification Report to the Department at least six months prior to the expiration of approval.

III. Product Package Contents

Product packages shall contain the following.

A. All Products

1. Cover sheet.
2. Contact information – company name, contact person, and local distributors with postal and physical address, telephone and facsimile numbers, and email and website addresses for each
3. Type of approval being requested – Experimental, Conditional, or Standard, or modifications to an existing approval
4. Process summary – written description of the function of the product and level of treatment claimed
5. Complete list of product models or configurations for which approval is sought

⁴ Sealed and signed by a Professional Engineer licensed to practice in New Mexico.

⁵ Liquid Waste Disposal and Treatment Regulations, 20.7.3 NMAC

- B. Advanced Treatment Products - In addition to applicable items under Section III.A above, an advanced treatment product package will include the following items:
1. Flow schematic and hydraulic profile which clearly identify each component and all flows, such as return flows, side flows, and surge flows
 2. Process discussion to substantiate performance claims
 3. Performance and process data collected and tested by an independent laboratory
 4. Drawings, specifications, and installation instructions for the product, stamped by a Professional Engineer,⁶ with sufficient detail to allow (absent site specifics) for field construction by a contractor
 5. Installation, Operation and Maintenance manuals for the product, including:
 - a. Installation instructions
 - b. Operating instructions
 - c. A listing of all parts and electrical and mechanical equipment⁷
 - d. Maintenance and preventative maintenance procedures
 - e. Repair and replacement information
 - f. A comprehensive troubleshooting guide
 6. Product modifications that must be made to account for difficult treatment environments, such as cold weather and high elevation
 7. Disclosure of product limitations, in terms of inappropriate applications
 - a. Flow quantity – minimum, maximum, and periodic
 - b. Influent water characteristics
 - c. Climate/temperature/elevation
 - d. Siting/installation
 8. Products with ANSI/NSF certification shall submit test results, test reports and approval documents related to the certification.
 9. Products without ANSI/NSF certification shall:
 - a. Report data from all sites installed under conditional status, with a minimum of 30 domestic installations
 - b. Data must be for a period of at least one year and in accordance with the liquid waste permit
 - c. Data should meet the criteria shown in Item IV.A.3 below and a report must be submitted that describes why any systems did not meet the levels
- C. Dispersal (Drainfield) Products - In addition to applicable items under Section III.A above, a drainfield product package will include the following items:
1. Drawings, specifications, and installation instructions for the product, stamped by a Professional Engineer,⁸ with sufficient detail to allow (absent site specifics) for field construction by a contractor

⁶ Licensed by a member jurisdiction of the National Council of Examiners for Engineering and Surveying

⁷ Reference the Uniform Plumbing Code (UPC), Uniform Mechanical Code (UMC) and National Electric Code (NEC), et. al. and their latest editions as adopted by the State of New Mexico. Reference New Mexico standards and codes. Include a summary of standards not referenced in the UPC, UMC or NEC, et. al. or New Mexico code. Lists of equipment and materials will be used by the WTAC –for reference only– when determining the ability of the product to perform the claimed treatment/process. The WTAC is not responsible for determining if the product meets standards and codes.

⁸ Licensed by a member jurisdiction of the National Council of Examiners for Engineering and Surveying

2. Product modifications that must be made to account for difficult environments, such as cold weather and high elevation
 3. Copies of sales brochures, catalogs and other promotional materials
 4. Storage Information – Testing data and calculations showing the subsurface liquid storage volume calculations and the way this volume may change with time.
 5. Surface Interface – Calculations showing the available contact surface area per unit volume of underdrain or bedding material available to dispersed flow.
 6. Distribution Information – Testing data or calculations showing the hydraulic ability of the product to carry and distribute flow.
 7. Structural Information – Testing data and calculations showing the products ability to maintain the integrity of the dispersal trench and/or bed over time, and the ability of the product to withstand the forces applied by live loads such as the inadvertent over-passing of vehicles/equipment.
 8. Decay – List material data showing the products components will not decay, deteriorate, or leach chemicals when exposed to sewage or the subsurface environment.
 9. Sizing Reduction – Dispersal products seeking a reduction allowance relative to conventional pipe and gravel drainfields shall also submit:
 - a. Testing data and calculations demonstrating the functionality of the product when installed at the requested reduced drainfield size.
 - b. If a theoretical justification is used, the manufacturer must submit a testing protocol to demonstrate functionality under the requested reduction.
 - c. Product limitations, such as unsuitable soil types, difficult terrains, structural capacity, or effluent quality requirements.
- D. Treatment Additives - In addition to applicable items under Section III.A above, a treatment additive product package will include the following items.
1. Claims being made
 2. List of ingredients
 3. Material Safety Data Sheet (MSDS) for the product
 4. Description of processes that are believed to be responsible for accomplishing the additive's desired effect
 5. Description of any ancillary reactions or processes caused or catalyzed by the additive
 6. The product application protocol
 7. Test results as ordered by the Department and/or requested by the WTAC
- E. Recommended Information
1. Product performance or evaluation reports prepared by entities other than the manufacturer
 2. Training program outline available to licensed contractors
 3. Articles in peer-reviewed professional publications that address the product
 4. Handouts and audio/visual presentations to be used during the WTAC presentation
 5. Other material

IV. Review Metrics

The WTAC will review packages for treatment, dispersal, and additive products against the following metrics.

A. Treatment Products:

1. ANSI/NSF Certified Products

- a. Products that have been certified by an ANSI-accredited organization as providing Class 1 treatment pursuant to ANSI/NSF Standard 40, shall be deemed capable of performing advanced treatment and recommended for Standard Status.
- b. Treatment systems that have been certified by an ANSI-accredited body as providing both secondary treatment and a 50% reduction in total nitrogen pursuant to ANSI/NSF Standard 245, shall be deemed capable of performing tertiary treatment and recommended for Standard Status corresponding to the average total nitrogen concentration in effluent determined during the ANSI/NSF testing plus an additional 5 mg/L. Manufacturers of treatment systems wishing to qualify for a total nitrogen approval lower than that described in this section may request a recommendation to follow the process in Sections IV.A.2 and IV.A.3 below.

2. Non-ANSI/NSF Certified Products - Products that do not have an ANSI accredited certification may apply for Conditional Status if they meet the treatment levels shown below in Section IV.A.3 as demonstrated by the following.

a. Results from a minimum of

- i. Twelve consecutive sample events,
- ii. No more than 2 events per month,
- iii. Events must occur within a 6 to 24 month period,
- iv. A minimum of three private residences must be sampled

b. Sampling Procedures

- i. Sample collection, field, and lab analysis shall be conducted according to procedures identified in the latest edition of one of the following:
 - Standard Methods for the Examination of Water and Wastewater, a joint publication of the American Public Health Association, the American Water Works Association, and the Water Environment Federation,
<http://www.standardmethods.org/>.
 - Methods and Guidance for the Analysis of Water, U.S. Environmental Protection Agency,
<http://www.ntis.gov/products/epa-water-methods.aspx#watercd> Techniques of Water-Resources Investigations, U.S. Geological Survey,
<http://pubs.er.usgs.gov/publication/wri20014186>
- ii. Other appropriate methods as approved by the department.

- iii Chain of custody documentation must be included with all test data.
 - iv Sample analysis must be performed by an appropriately certified independent laboratory.
 - v. The product package must specify which test methods were used.
- c. Required Analyses⁹ for Non-ANSI/NSF Approved Products

INFLUENT	EFFLUENT
<i>Field Parameters for Secondary or Tertiary Treatment</i>	
pH	pH
Temperature	Temperature
	DO
<i>Laboratory Parameters for Secondary Treatment</i>	
BOD ₅ or COD	BOD ₅ or COD
TSS	TSS
<i>Laboratory Parameters for Tertiary Treatment</i>	
BOD ₅ or COD	BOD ₅ or COD
TSS	TSS
TKN	TKN
Alkalinity	Nitrates
	Alkalinity
<i>Laboratory Parameters for Disinfection Treatment</i>	
	E. coli

3. Non ANSI/NSF approved products may apply for Standard Status if they meet the treatment levels shown below:
- a. Secondary treatment
 - i. The average of twelve (12) consecutive sample results of 30 mg/L BOD or less, with no single sample greater than 60 mg/L or
 - ii. The average of twelve (12) consecutive sample results of 80 mg/L COD or less, with no single test greater than 110 mg/L, and
 - iii. The average of twelve (12) consecutive sample results of 30 mg/L TSS or less, with no single sample greater than 60 mg/L
 - b. Tertiary treatment:¹⁰
 - i The average of twelve (12) consecutive sample results with TKN plus nitrate removal being greater than 50 percent
 - ii Manufacturers of tertiary treatment systems wishing to qualify for TKN plus nitrate removal greater than 50 percent must submit twelve (12) consecutive sample results with no single result being greater than 50 percent above the average. Approval will be given for the average demonstrated TKN plus nitrate concentration plus 20 percent of the average.
 - c. Disinfection treatment: shall achieve the requirements of 20.7.3.604 NMAC.

⁹ Either BOD₅ or CBOD are acceptable, but the same method must be used for both influent and effluent data.

¹⁰ The WTAC may recommend to the Department that the approved total nitrogen level be modified based on results of the monitoring data collected during conditional status testing.

4. Product models may be issued approval for standard status based on similarity to models that have undergone testing and have received certification to standards, such as those mentioned in Section IV.A.1. "Similar model" means models using the same process, configuration, proportional loading rates, proportional dimensions, and the same materials and configuration of component equipment, either larger or smaller than the tested and certified model. Component equipment must be proportional in function. Accessibility, installation procedures, requirements for and ease of maintenance or repair, parts availability and longevity of the product must be equivalent to the tested and certified model. Limitations on products smaller or larger will be one-fifth and five times rated hydraulic flow of the approved product, respectively. Only products from the same manufacturer are eligible for consideration as similar.
- B. Dispersal Products: Drainfield products will be reviewed for their dependability and performance with reference to traditional pipe and gravel leachfields. Sizing reductions may be recommended.¹¹
- C. Treatment Additives: Treatment additives making a claim of advanced treatment or improved drainfield performance shall submit data and be reviewed by the WTAC according to procedures established in Sections IV.A or IV.B as appropriate.

V. Products Approved by the Department Prior to WTAC

- A. As requested by the manufacturer the WTAC will review and make recommendations of status for products approved for installation in New Mexico prior to the formation of the WTAC.¹²
- B. Products with ANSI/NSF certification shall submit documentation of current ANSI/NSF certification.
- C. Products without ANSI/NSF certification shall submit a product package according to Section III of this document and will be reviewed by the WTAC in accordance with this review process.

VI. Products with Conditional or Experimental Status

- A. As requested by the Department, when (1) approval time has lapsed and no request for advancement in status has been received, (2) reports are received by the Department indicating that the product is not performing as expected, or (3) the Department receives other information that suggests that listing is no longer warranted, the WTAC will review products previously reviewed by the WTAC and approved by the Department for Conditional or Experimental Status. The

¹¹ A maximum 30 percent reduction, as compared to a conventional pipe and gravel system, is allowed by the Liquid Waste Disposal and Treatment Regulations, 20.7.3.701.C NMAC.

¹² The WTAC is considered to have been formed on June 20, 2003, the effective date of 9-7A-15 NMSA.

review will be limited to product design characteristics that may have contributed to the product's failure to perform or modifications to the product that have occurred since the original approval. A letter will be sent by the Department to manufacturers of such products informing them of this review and the facts supporting the need for review. If appropriate, a number of installed systems for each product, as determined by Table 1, will be reviewed. The Department may select specific sites to be included. Any remainder of the required number of sites, not selected by the Department, may be selected by the manufacturer.

Table 1 – Number of Installed Systems to be Reported/Reviewed

No. of Products	Installed	1-3	4-10	11-20	20-100	>100
	Reviewed	all	4	11	20	25

- B. An abbreviated product package shall be submitted by the manufacturer or their New Mexico representative. The abbreviated package shall include any modifications of the product as defined in 20.7.12 NMAC. In addition, pumping and inspection reports, when such reporting is required by the experimental or conditional approval shall be included. The monitoring data shall be submitted in electronic format on a Department-supplied spreadsheet.
- C. After reviewing the product package, the WTAC will recommend to the Department any changes in product status it deems appropriate and the Secretary will make the final decision.
- D. Failure to submit the required information by the date stated in the notification letter, or failure of a product to achieve the appropriate metrics specified in Section IV.A and in the product's liquid waste permits, may be grounds for removal from the Approved Products list or other corrective action by the Department. Before removal from the Approved Products list or other corrective action, the manufacturer will be given notice by the Department of the contemplated action and will be given an opportunity to respond in a reasonable time.¹³
- E. If an Experimental or Conditional approval has not been exercised within thirty months of being issued, a letter from the Department to the manufacturer will be sent that states the Department intends to cancel approval. An approval is considered to not have been exercised if no permits have been issued and no installations have occurred. The Department letter will also grant a reasonable period for a response from the manufacturer before such action will be taken.

¹³ Other corrective action may include, but is not limited to, a recommendation from the WTAC that the Approved Status of the product be changed to Conditional or Experimental, or that the manufacturer be given additional time (not to exceed thirty months) to gather data and submit a product package.

VII. Periodic Review and Re-Approval

After evaluation the WTAC may recommend a product for approval by the Secretary of the New Mexico Environment Department.

- A. All on-site advanced wastewater treatment and disposal products approved by the Secretary according to Standard Status are subject to periodic review and renewal to confirm that they meet the current performance criteria for which they have been approved. After evaluation of the material submitted as described in this section, the WTAC may recommend a current product for Renewal of Approval by the Secretary of the New Mexico Environment Department.
 - 1. Advanced treatment products must be re-approved by the Secretary every seven years
 - 2. Dispersal products and treatment additives must be re-approved by the Secretary every 10 years.
- B. Manufacturers wishing to renew approval of their products must submit an Application for Renewal of approval and a Design Modification Report to the Department at least six months prior to expiration of approval.
- C. The Application for Renewal of Approval must include:
 - 1. For treatment systems, the information listed in III.A. of this document– Required Information, except that information listed in sections III.A.13 and III.A.14.
 - 2. For dispersal (drainfield) products, the information listed in III.B. of this document – Additional Required Information for Dispersal (Drainfield) Products
 - 3. For treatment additives, the information listed in III.C. of this document – Additional Required Information for Treatment Additives
- D. A Design Modification Report shall be submitted at the same time as the Application for Renewal that will include a description of all modifications to the treatment system, dispersal product, or treatment additive made since its last certification.
 - 1. The Design Modification Report must include a description of any changes in process design, system configuration, construction materials, process loading rates, and process equipment (pumps, blowers, valves, controls, etc.). An explanation of why the modifications were made must be included.
 - 2. The Design Modification Report must provide an analysis and statement by a Licensed Professional Engineer that the modifications will not diminish system performance.
- E. To be eligible for Renewal of Approval at least five systems must have been installed in New Mexico since the product was last approved by the Secretary.

F. In addition to the Application for Renewal of Approval and Design Modification Report, the Department will provide the following information to the WTAC for its consideration:

1. Number of systems installed in New Mexico for treatment and dispersal systems, and list of manufacturer certified installers and maintenance service providers in New Mexico.
2. Effluent monitoring data collected within the past two years for installed treatment systems for at least five systems
3. A summary of systems which have failed or not met intended performance criteria
4. An analysis of the overall performance of the system and its ability to meet performance criteria for treatment and dispersal systems

Henceforth, the WTAC will recommend that approval of a product by the Department be valid for seven years for advanced treatment products and ten years for dispersal products.

B. Manufacturers wishing to renew approval of advanced treatment or dispersal products may submit a Request for Renewal, and a Design Modification Report to the Department at least six months prior to the expiration of approval. The Department will endeavor to send a notice to manufacturers at least nine months prior to the expiration of approval, but failure to do so does not relieve a manufacturer of the obligation to submit a timely Request for Renewal and Design Modification Report.

C. Table 1 shows the minimum number of advanced treatment systems for which data shall be supplied by the Department. To the extent that data is available, the Department will provide:

- a. Effluent monitoring data for systems installed and permitted during the past two years.
- b. Chronological graphs of the data.
- c. A summary of system upsets or performance failures of which the Department is aware.
- d. A discussion/analysis of the data with regard to overall performance of the product and its ability to provide treatment.
- e. A list of manufacturer certified installers and maintenance service providers who do business in New Mexico.

D. The Design Modification Report for dispersal products shall be in pdf format.

E. The Department shall post the Design Modification Report on its website and will forward the report to the WTAC for its review and recommendations.

VIII. Changes in Product Design

If any modifications are made to an approved technology, the manufacturer shall notify the Bureau Engineer prior to distribution of the product in the State of New Mexico. The Bureau Engineer will determine if the changes are subject to review by the WTAC based on the definition found in, Section IV.A.4 and will inform the manufacturer

IX. Performance

If the Department receives or collects information that an approved technology is not meeting appropriate performance criteria as described in Section IV and all mechanisms provided in 20.7.3.901.K have failed to remedy the problem, it may recommend that the product approval be re-evaluated by the WTAC.

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